

Applicant: Lee, Hyok  
Serial No.: 10/789,882

PATENT  
Atty Docket: 1506-500

### REMARKS

This Amendment is filed in response to the Official Action mailed June 21, 2005. In this Amendment, claims 5 and 9 are amended, claims 2-4, 6-8 and 10 are unchanged, claims 11-19 are added and claims 1, 5, 9, 11, 14, and 17 are independent. Following entry of this amendment, claims 1-19 shall be pending.

In the Office Action, figures 1, 2, 4, and 5 are objected to because of lack of a prior art label, claims 2-4 and 6-8 are objected to because of an informality, claims 5-8 are rejected as being indefinite and claims 1, 5, 9, and 10 have been rejected based on prior art grounds. The applicants hereby request reconsideration of these claims in view of the reasons set forth below.

#### I. DRAWING OBJECTION

The Examiner objected to figures 1, 2, 4, and 5 as lacking a legend such as "Prior Art", since these figures illustrate only that which is old. Figures 1, 2, 4, and 5 have been amended to include the legend "Prior Art" and are attached to this response.

#### II. CLAIM OBJECTION

The Examiner objected to claims 2-4 and 6-8 as being dependent upon a rejected base claim, but indicated that these claims would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The Examiner is thanked for the indication of allowability of these claims. Further, the applicant has rewritten claims 2-4 in independent form as newly added claims in accordance with the Examiner's indication. Specifically, claim 17 corresponds to claim 2 written in independent form; claim 11 corresponds to claim 3 written in independent form; and claim 14 corresponds to claim 4 written in independent form. In addition, dependent claims 18 and 19 have been added to depend from claim 17,

Applicant: Lee, Hyok  
Serial No.: 10/789,862

PATENT  
Atty Docket: 1506-500

claims 12 and 13 have been added to depend from claim 11, and claims 15 and 16 have been added to depend from claim 14.

In regards to claims 6-8 which depend from claim 5, the rejection of claim 5 is traversed as discussed below. Therefore, it is believed that the objection of claims 6-8 should be withdrawn.

### III. REJECTIONS UNDER 35 U.S.C. SECTION 112

The Examiner objected to claims 5-8 because there is no antecedent basis for "said sealing member". Claim 5 has been amended to correct the term "a scaling member" to "a sealing member" as suggested by the Examiner. Withdrawal of the rejection under 35 U.S.C. § 112 is requested.

### IV. REJECTIONS UNDER 35 U.S.C. SECTION 102

Claims 1, 5, 9, and 10 are rejected under 35 U.S.C. Section 102(b) as being anticipated by U.S. Patent No. 5,996,608 to *Hunter et al. (The Hunter Patent)*. For at least the reasons set forth below, it is submitted that these prior art rejections should be withdrawn and the pending claims allowed.

Claim 1 is directed to an irrigation valve that includes a guide washer positioned above the valve and having an inner circular channel containing fins and a diaphragm positioned adjacent to the guide washer over the fins.

The sole reference asserted against claim 1 is *The Hunter Patent*, which discloses a solenoid-operated valve for an irrigation system. Specifically, the Examiner asserts that *The Hunter Patent* discloses "an irrigation valve including a housing 16, a valve seat 28, a valve 76, a guide washer 72 with cover 68 which is positioned above the valve 76 and includes an inner circular channel with fins shown surrounding central passage 74 as shown in figure 4, a diaphragm 38 which is adjacent the washer and over the fins and a solenoid 35." However, the Applicant believes that a closer

Applicant: Lee, Hyok  
Serial No.: 10/789,862

PATENT  
Atty Docket: 1506-500

examination of *The Hunter Patent* reveals an arrangement that differs from the invention as recited in claim 1 as set forth below.

First, it does not appear to the Applicant that *The Hunter Patent* discloses a guide washer having an inner circular channel containing fins as claimed. Although Figure 4 of *The Hunter Patent* seems to show some type of structure within the seal support 72, it is not clear if this structure constitutes an inner circular channel containing fins as claimed. The Applicant can find no discussion of this structure within the specification of this patent and the seal support 72 is depicted the same in all relevant Figures. Accordingly, it is submitted that a proper case of anticipation has not been established at least as to this element.

Second, *The Hunter Patent* does not include a diaphragm positioned adjacent to the guide washer over the fins as also recited in claim 1. Even if the seal support 72 could somehow be considered to be a guide washer having an inner circular channel containing fins, the membrane 38 (the diaphragm) of *The Hunter Patent* is not positioned over the "fins" of the seal support 72. As seen in Figures 3 and 4, the *Hunter* valve has a support cover 68 disposed over the seal support 72. Moreover, this support cover 68 has a solid top surface that completely covers the seal support 72 except for a center hole positioned over center passage 74. Thus, the membrane 38 is positioned adjacent the support cover 68, not the seal support 72 and thus cannot be properly asserted as being a diaphragm positioned adjacent the guide washer over the fins as set forth in claim 1. Alternately, if the support cover 68 and the seal support 72 were to be somehow construed as collectively being the recited guide washer, then there would be no diaphragm positioned adjacent to the guide washer over the fins as claimed.

In summary, *The Hunter Patent* at least fails to disclose a guide washer positioned above the valve and having an inner circular channel containing fins and a diaphragm positioned adjacent to the guide washer over the fins. Thus, for at least, these reasons *The Hunter Patent* fails to anticipate claim 1. It is also submitted that *The Hunter Patent* does not render the invention obvious.

Applicant: Lee, Hyok  
Serial No.: 10/789,862

PATENT  
Atty Docket: 1506-500

Turning next to claim 5, the reasons set forth above with respect to claim 1 apply essentially the same way in claim 5. The distinction is that claim 5 recites a sealing member having an upper surface comprising a slotted annular surface instead of the guide washer terminology of claim 1. The distinctions from *The Hunter Patent* however are similar. *The Hunter Patent* fails to disclose a sealing member having an upper surface with slotted annular space. Nor does it disclose a sealing member with the upper surface positioned to contact the diaphragm. Thus, for at least, these reasons *The Hunter Patent* fails to anticipate claim 5. It is also submitted that *The Hunter Patent* does not render the invention obvious.

Turning to claims 6-8, these claims depend from claim 5 and thus for at least the above reasons are also novel and unobvious over the cited prior art. However, as already acknowledged by the Examiner, these claims further limit the claimed invention and thus are separately patentable over the cited prior art.

Turning next to claim 9, this claim has been amended to clarify the invention. As amended, claim 9 is directed to a method of operating an irrigation valve, including preventing undue tension on a diaphragm of said diaphragm chamber by providing substantially uniform support of said diaphragm during all occurrences of pressurization of said diaphragm chamber, including supporting said diaphragm with a non-continuous surface.

The sole reference asserted against claim 9 is *The Hunter Patent*, which, as previously discussed with regards to claims 1 and 5, discloses a solenoid-operated valve for an irrigation system. However, as discussed above, the Applicant believes that *The Hunter Patent* does not disclose the invention as recited in claim 9.

Applicant: Lee, Hyok  
Serial No.: 10/789,862

PATENT  
Atty Docket: 1506-500

For example, *The Hunter Patent* does not include supporting a diaphragm with a non-continuous surface. Even if the sealing support 72 could somehow be considered to include an upper surface that is non-continuous, this surface does not support the membrane 38. As seen in Figures 3 and 4, the *Hunter* valve includes a support cover 68 that is disposed over the seal support 72. This support cover 68 clearly includes a solid continuous top surface that covers the diameter of the seal support 72 except for a center hole positioned over center passage 74. Thus, it is the support cover 68, which is continuous, that supports the membrane 38, not the seal support 72.

Thus, for at least, this reason *The Hunter Patent* fails to anticipate claim 9. It is also submitted that *The Hunter Patent* does not render claim 9 obvious.

Turning to claim 10, this claim depends from claim 9 and thus for at least the above reasons is also novel and unobvious over the cited prior art. However, this claim further limits the claimed invention and thus is separately patentable over the cited prior art.

Applicant: Lee, Hyok  
Serial No.: 10/789,862

PATENT  
Atty Docket: 1506-500

**CONCLUSION**

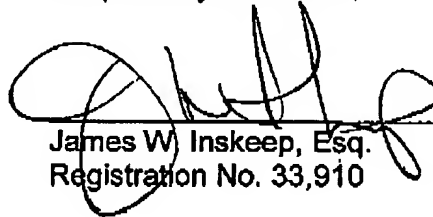
In view of the foregoing, it is submitted that pending claims 1-19 are now in condition for allowance. Hence an indication of allowability is hereby requested.

If for any reason direct communication with Applicants' attorney would serve to advance prosecution of this case to finality, the Examiner is cordially urged to call the undersigned attorney at the below listed telephone number.

The Commissioner is authorized to charge any fee which may be required in connection with this Amendment to deposit account No. 50-2809.

Respectfully submitted,

Dated: Sept. 21, 2005

  
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